IN THE CLAIMS:

1. (Previously Presented) A semiconductor device comprising:

a semiconductor layer having a crystalline structure on an insulating surface, the semiconductor layer having at least a source region, a drain region and a channel region,

wherein the channel region contains a rare gas element having a concentration gradient, and the channel region has at least a first portion and a second portion, the second portion being more distant from the insulating surface than the first portion, and

wherein a crystallinity of the first portion in the channel region is higher than that of the second portion in the channel region.

2. (Canceled)

3. (Original) A semiconductor device according to claim 1, wherein the semiconductor device is a liquid crystal display device.

4. (Original) A semiconductor device according to claim 1, wherein the semiconductor device is an EL display device.

5. (Original) A semiconductor device according to claim 1, wherein the semiconductor device is at least one selected from the group consisting of a personal computer, a video camera, a mobile computer, a goggle type display, a player using a recording medium, a digital camera, a projector, a portable telephone, and a portable book.

6. (Currently Amended) A semiconductor device comprising:

a semiconductor layer having a crystalline structure on an insulating surface, the semiconductor layer having at least a source region, a drain region and a channel region,

an insulating film on the semiconductor layer,

wherein ~~a rare gas element having a concentration gradient is contained between the channel region and the insulating film, and~~ the channel region has at least a first portion and a second portion, the second portion contains a rare gas element having a concentration

gradient, the second portion being more distant from the insulating surface than the first portion, and

wherein a crystallinity of the first portion in the channel region is higher than that of the second portion in the channel region.

7. (Canceled)

8. (Original) A semiconductor device according to claim 6, wherein the semiconductor device is a liquid crystal display device.

9. (Original) A semiconductor device according to claim 6, wherein the semiconductor device is an EL display device.

10. (Original) A semiconductor device according to claim 6, wherein the semiconductor device is at least one selected from the group consisting of a personal computer, a video camera, a mobile computer, a goggle type display, a player using a recording medium, a digital camera, a projector, a portable telephone, and a portable book.

11. (Currently Amended) A semiconductor device comprising:

a first semiconductor layer having a crystalline structure on an insulating surface;

a second semiconductor layer on the first semiconductor layer;

a channel region in the first semiconductor layer and the second semiconductor layer;

an insulating film in contact with the second semiconductor layer; and

an electrode in contact with the insulating film,

wherein the channel region in the second semiconductor layer contains a rare gas element having a concentration gradient, and

wherein a crystallinity of the channel region in the first semiconductor layer is higher than that of the channel region in the second semiconductor layer.

12. (Original) A semiconductor device according to claim 11, wherein the second semiconductor layer has a crystalline structure.

13. (Original) A semiconductor device according to claim 11, wherein the second semiconductor layer has an amorphous structure.

14. (Canceled)

15. (Original) A semiconductor device according to claim 11, wherein the semiconductor device is a liquid crystal display device.

16. (Original) A semiconductor device according to claim 11, wherein the semiconductor device is an EL display device.

17. (Original) A semiconductor device according to claim 11, wherein the semiconductor device is at least one selected from the group consisting of a personal computer, a video camera, a mobile computer, a goggle type display, a player using a recording medium, a digital camera, a projector, a portable telephone, and a portable book.

18. (Currently Amended) A semiconductor device comprising:

a semiconductor layer having a crystalline structure on an insulating surface, the semiconductor layer having at least a source region, a drain region and a channel region;

a gate insulating film adjacent to the semiconductor layer,

wherein the semiconductor layer contains a rare gas element having a concentration gradient along a direction perpendicular to the insulating surface, and the channel region has at least a first portion and a second portion, the second portion being more distant from the insulating surface than the first portion, and

wherein a crystallinity of the first portion in the semiconductor layer is higher than that of the second portion in the semiconductor layer.

19. (Canceled)

20. (Original) A semiconductor device according to claim 18, wherein the semiconductor device is a liquid crystal display device.

21. (Original) A semiconductor device according to claim 18, wherein the semiconductor device is an EL display device.

22. (Original) A semiconductor device according to claim 18, wherein the semiconductor device is at least one selected from the group consisting of a personal computer, a video camera, a mobile computer, a goggle type display, a player using a recording medium, a digital camera, a projector, a portable telephone, and a portable book.

23. (Currently Amended) A semiconductor device comprising:

a semiconductor layer having a crystalline structure on an insulating surface, the semiconductor layer having at least a source region, a drain region and a channel region;

a gate insulating film adjacent to the semiconductor layer,

wherein the channel region has at least a first portion and a second portion,

wherein ~~the semiconductor layer contains a rare gas element, a first portion of the semiconductor layer having~~ the first portion has a higher concentration of the rare gas element than ~~a second portion of the semiconductor layer~~ the second portion,

wherein the first portion is closer to the gate insulating film than the second portion, and

wherein a crystallinity of the second portion is higher than that of the first portion.

24. (Canceled)

25. (Original) A semiconductor device according to claim 23, wherein the semiconductor device is a liquid crystal display device.

26. (Original) A semiconductor device according to claim 23, wherein the semiconductor device is an EL display device.

27. (Original) A semiconductor device according to claim 23, wherein the semiconductor device is at least one selected from the group consisting of a personal computer, a video camera, a mobile computer, a goggle type display, a player using a recording medium, a digital camera, a projector, a portable telephone, and a portable book.

28-40. (Canceled)

41. (Previously Presented) A semiconductor device according to claim 1, wherein the lower layer in the channel region comprises poly-silicon and the upper layer in the channel region comprises amorphous silicon.

42. (Previously Presented) A semiconductor device according to claim 6, wherein the lower layer in the channel region comprises poly-silicon and the upper layer in the channel region comprises amorphous silicon.

43. (Previously Presented) A semiconductor device according to claim 11, wherein the first semiconductor layer comprises poly-silicon and the second semiconductor layer comprises amorphous silicon.

44. (Previously Presented) A semiconductor device according to claim 18, wherein the lower layer in the channel region comprises poly-silicon and the upper layer in the channel region comprises amorphous silicon.

45. (Currently Amended) A semiconductor device comprising:
an electrode over an insulating surface;
an insulating film over the electrode;

a semiconductor layer having at least a source region, a drain region and a channel region over the electrode with the insulating film interposed therebetween,

wherein the channel region contains a rare gas element having a concentration gradient,

wherein the channel region has at least a first portion and a second portion,

wherein the second portion is more distant from the insulating film than the first portion, and

wherein a crystallinity of the first portion in the channel region is higher than that of the second portion in the channel region.

46. (Previously Presented) A semiconductor device according to claim 45, wherein the semiconductor device is a liquid crystal display device.

47. (Previously Presented) A semiconductor device according to claim 45, wherein the semiconductor device is an EL display device.

48. (Previously Presented) A semiconductor device according to claim 45, wherein the semiconductor device is at least one selected from the group consisting of a personal computer, a video camera, a mobile computer, a goggle type display, a player using a recording medium, a digital camera, a projector, a portable telephone, and a portable book.

49. (Currently Amended) A semiconductor device comprising:

an electrode over an insulating surface;

an insulating film over the electrode;

a semiconductor layer having at least a source region, a drain region and a channel region over the electrode with the insulating film interposed therebetween,

wherein the channel region has at least a first portion and a second portion,

wherein ~~a rare gas element having a concentration gradient is contained in the semiconductor layer~~ the second portion contains a rare gas element having a concentration gradient,

wherein the second portion is more distant from the insulating film than the first portion, and

wherein a crystallinity of the first portion in the channel region is higher than that of the second portion in the channel region.

50. (Previously Presented) A semiconductor device according to claim 49, wherein the semiconductor device is a liquid crystal display device.

51. (Previously Presented) A semiconductor device according to claim 49, wherein the semiconductor device is an EL display device.

52. (Previously Presented) A semiconductor device according to claim 49, wherein the semiconductor device is at least one selected from the group consisting of a personal computer, a video camera, a mobile computer, a goggle type display, a player using a recording medium, a digital camera, a projector, a portable telephone, and a portable book.

53. (Currently Amended) A semiconductor device comprising:

an electrode over an insulating surface;

an insulating film over the electrode;

a first semiconductor layer over the electrode with the insulating film interposed therebetween; [[and]]

a second semiconductor layer over the first semiconductor layer[[,]]; and

a channel region in the first semiconductor layer and the second semiconductor layer,

wherein the channel region in the second semiconductor layer contains a rare gas element having a concentration gradient, and

wherein a crystallinity of the channel region in the first semiconductor layer is higher than that of the channel region in the second semiconductor layer.

54. (Previously Presented) A semiconductor device according to claim 53, wherein the semiconductor device is a liquid crystal display device.

55. (Previously Presented) A semiconductor device according to claim 53, wherein the semiconductor device is an EL display device.

56. (Previously Presented) A semiconductor device according to claim 53, wherein the semiconductor device is at least one selected from the group consisting of a personal computer, a video camera, a mobile computer, a goggle type display, a player using a recording medium, a digital camera, a projector, a portable telephone, and a portable book.